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Object Detecting Device

This application is a 371 of PCT/JP04/02994, filed 03/08/2004.

FIELD OF THE INVENTION

The present invention generally relates to an object detecting device
5 of a kind utilizing microwaves generally employed in association with an
automatic door system or for security monitoring purpose and, more particularly,
to the object detecting device in which the detection area, from which an object
such as, for example, a human body is to be detected, can be properly adjusted in
dependence on the environment for installation of the object detecting device.

10 BACKGROUND ART

The object detecting device for an automatic door system or for
security monitoring purpose is generally so designed that while a detection wave
in the form of a microwave is emitted towards a detection area from which the
presence or absence of an object such as, for example, one or more human bodies
15 is desired to be detected, the object can be detected in terms of a change in
frequency brought about by the Doppler effect when a portion of the detection
wave reflected from the object is received.

As an antenna for defining the detection area for such an object
detecting device, a horn antenna has hitherto been employed largely. However,
20 since the horn antenna unit including the horn antenna itself and peripheral parts
represents a shape generally similar to the shape of a trumpet and is therefore
bulky in size, the use of the horn antenna tends to result in increase in size of the
object detecting device and, therefore, the handling of the object detecting device
as a whole during the installation thereof tends to be complicated and
25 time-consuming.

Also, it is a general practice that depending on the environment in
which the object detecting device is set up, the detection area that can be covered
by the object detecting device is adjusted to a relatively wide detection area
where the object detecting device is set up in a door assembly of a relatively